

IN THE CLAIMS:

Please amend the claims as follows:

1. (currently amended) In a system including: at least one storage device, each equipped with a real volume; a virtualization device connected to said at least one storage device by way of a network and managing a real volume of said at least one storage device as a virtual volume; and a management server connected to said at least one storage device and said virtualization device by way of a management network;

a failure notification receiving method comprising ~~the steps of:~~

a failure notification step ~~for in which~~ said management server ~~to receive~~ receives a plurality of failure notifications from said at least one storage device and said virtualization device at which a failure is detected;

an associating step ~~for in which~~ said management server ~~to associate~~ associates said plurality of failure notifications based on associations managed by said virtualization device between said real volume and said virtual volume; and

a failure message outputting step for outputting results in which said plurality of failure notifications ~~is~~ are associated.

2. (currently amended) A method for managing failure information as described in claim 1, wherein said associating step includes a step ~~for of~~ of associating a plurality of failure notifications involving a shared real volume or virtual volume related to a failure notified by a failure notification.

3. (currently amended) A method for managing failure information as described in claim 2, wherein said associating step includes a step ~~for of~~ of associating

a plurality of failure notifications received by said management server within a fixed time interval.

4. (currently amended) A method for managing failure information as described in claim 1, further comprising the steps of: ~~a step for~~
having said management server receive configuration information about said network from a device connected to said network; and
~~a step for~~ having said management server identify an association relationship between said real volume and said virtual volume based on said configuration information.

5. (currently amended) A method for managing failure information as described in claim 1, wherein:

said associating step includes a step ~~for~~ of identifying causal relationships between said plurality of failure notifications based on an association relationship between said real volume and said virtual volume; and

said outputting step includes a step ~~for~~ of outputting said identified causal relationships.

6. (currently amended) A method for managing failure information as described in claim 5, wherein: ~~said step for~~ of identifying causal relationships includes:

a step ~~for~~ of associating a plurality of failure notifications involving a shared real volume or virtual volume related to a failure notified by a failure notification; and

a step ~~for~~ of identifying, out of said associated failure notifications, a failure notification notifying a hardware malfunction as a failure notification notifying a failure

cause and a failure notification notifying an access error as a failure notification issued under influence of said failure cause.

7. (currently amended) A method for managing failure information as described in claim 1, further comprising the steps of:

~~a step for~~ having said management server take a plurality of severity information, indicating severity of failure information based on different standards, contained in a plurality of failure notifications received by said at least one storage device or said virtualization device at which said failure is detected and convert said severity information to severity information based on a common standard; and

~~a step for~~ having said management server output failure information based on converted severity information according to a method determined ahead of time.

8. (currently amended) In a system including: a plurality of storage devices connected to a server device by way of a network; and a management server connected to said plurality of storage devices by way of a management network; a method for managing failure information comprising the steps of:

a failure notification receiving step ~~for~~of having said management server receive a plurality of failure notifications from a plurality of storage devices at which failures are detected;

a converting step ~~for~~of converting a plurality of severity information, indicating severity of failure information based on different standards, contained in said plurality of failure notifications to severity information based on a common standard; and

a processing step of processing each of said plurality of failure notifications based on converted severity information.

9. (currently amended) A method for managing failure information as described in claim 8₁ wherein said converting step is executed based on configuration information of said network.

10. (currently amended) A method for managing failure information as described in claim 9₁ wherein:

one of said plurality of storage devices manages a real volume in another storage device as a virtual volume; and

said converting step is executed based on an association relationship between said real volume and said virtual volume managed by said one of said plurality of storage devices.

11. (currently amended) In a management server connected by way of a management network to at least one storage device including a real volume and a virtualization device connected by way of a network to said at least one storage device and managing said real volume of said at least one storage device as a virtual volume, a management server comprising:

an interface control module for connecting to said management network;

a processor;

a memory storing a program executed by said processor and information used by said processor;

an output module outputting processing results from operations executed by said processor; wherein:

said interface control module receives a plurality of failure notifications from said at least one storage device and said virtualization device at which a failure is detected;

said processor associates said plurality of failure notifications based on an association relationship between said real volume and said virtual volume managed by said virtualization device; and

said output module outputs results from said processor in which said failure notifications are associated.

12. (currently amended) A management server as described in claim 11, wherein said processor associates a plurality of failure notifications involving a shared real volume or virtual volume related to a failure notified by a failure notification.

13. (currently amended) A management server as described in claim 12, wherein said processor associates a plurality of failure notifications received by said interface control module within a fixed time interval.

14. (currently amended) A management server as described in claim 12, wherein:

said interface control module receives configuration information about said network from a device connected to said network; and

said processor identifies an association relationship between said real volume and said virtual volume based on said configuration information.

15. (currently amended) A management server as described in claim 11, wherein:

said processor identifies causal relationships between said plurality of failure notifications based on an association relationship between said real volume and said virtual volume; and

said outputting module outputs said identified causal relationships.

16. (currently amended) A management server as described in claim 15, wherein:

said processor associates a plurality of failure notifications involving a shared real volume or virtual volume related to a failure ~~notified~~indicated by a failure notification; and

out of said associated failure notifications, a failure notification ~~notifying~~indicating a hardware malfunction is identified as a failure notification ~~notifying~~indicating a failure cause and a failure notification ~~notifying~~indicating an access error is identified as a failure notification issued under influence of said failure cause.

17. (currently amended) A management server as described in claim 11, wherein:

said processor takes a plurality of severity information, indicating severity of failure information based on different standards, contained in a plurality of failure notifications received by said at least one storage device or said virtualization device at which said failure is detected and converts said severity information to severity information based on a common standard; and

said output module outputs failure information based on converted severity information according to a method determined ahead of time.

18. (original) In a management server connected by way of a management network to a plurality of storage devices connected to a server device by way of a network, a management server comprising:

an interface control module connected to said management network;

a processor; and

an output module outputting processing results from operations executed by said processor; wherein:

said interface control module receives a plurality of failure notifications from a plurality of storage devices at which failures are detected; and

said processor converts a plurality of severity information, indicating severity of failure information based on different standards, contained in said plurality of failure notifications to severity information based on a common standard and processes each of said plurality of failure notifications based on said converted severity information.

19. (currently amended) A management server as described in claim 18, wherein:

said processor converts said plurality of severity information based on different standards to severity information based on a common standard using configuration information about said network.

20. (currently amended) A management server as described in claim 19, wherein:

one of said plurality of storage devices manages a real volume of another storage device as a virtual volume; and

said processor converts said plurality of severity information based on different standards to severity information based on a common standard using an association relationship between said real volume and said virtual volume managed by said one of said plurality of storage devices.